



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

In re patent
appln. of: Albert J. FRATTAROLA

Serial No.: 09/803,221
Filed: March 9, 2001
For: **FLOATING CAPTIVE SCREW**
Grp. Art Unit: 3679
Examiner: Flemming Saether
Atty. Dkt.: 61-01

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Alex R. Sluzas, Reg. No. 28,669
Dated: August 5, 2004

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Sir:

This response is being submitted under certificate of mailing on Thursday, August 5, 2004 in response to the Examiner's Action mailed April 7, 2004 in the above-referenced patent application setting a three-month shortened statutory period for response. A petition for a one-month extension of time accompanies this Response.

Claim 1 stands finally rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,462,395 ("Damm") in view of U.S. Patent 3,465,803 ("Ernest"). This rejection is respectfully traversed, and reconsideration and withdrawal of the rejection are respectfully requested.

The Examiner states that Damm discloses a captive screw comprising a ferrule (3) and a screw (2) including a head (4), a shank (8), a thread (10) and a collar (13) (referring also to Figure 8) formed on the shank proximate the thread. The Examiner states that the screw is

captive on the ferrule between the head and the collar. The Examiner acknowledges that Damm does not include a spring.

The Examiner nevertheless states that Ernest discloses a captive screw including a spring (50) extending between a head (38) and a ferrule (10), and teaches that to provide a spring is known in the art by virtue of the disclosure of embodiments both with (Figs. 1-12) and without (Figs. 13-15) a spring.

The Examiner concludes that at the time the invention was made, it would have been obvious for one of ordinary skill in the art to provide the captive screw of Damm with a spring between the head a ferrule as disclosed in Ernest because Ernest teaches that it is well known to provide a spring to an otherwise un-sprung captive screw. The Examiner explains that the spring would be operative to retract the screw and that this would facilitate installation.

With respect to applicant's arguments responsive to the initial rejection made on this art, the Examiner states that with respect to applicant's first argument that Damm is not a "captive screw, as that term is understood in the art", the Examiner disagrees because, as applicant is aware, the claims are to be given their broadest reasonable interpretation.

The Examiner further explains that with that in mind, since the collar (labeled 13 in Damm) is larger than an opening in the ferrule (22) it inherently would provide a captive feature to the screw as such it is proper to characterize the device of Damm as a "captive screw". The Examiner concludes that the device of Damm being intended as a sound decoupling connection element does not take away from the fact that it is also a captive screw

In reply to the Examiner's response, applicant agrees that the embodiment of Damm's sound decoupling element shown in Figures 1 and 2 includes a screw 2 that has an upset swelling 13 formed on the shaft 8, and that the shaft 8 extends between the screw head 4 and the swelling 13, and that the formed body 3 has a central or internal opening 16 having a

constant breadth through which the screw 2 extends. Applicant respectfully contends that despite these structural elements, the sound decoupling connecting element 1 does not function as a "captive screw," as that term is understood in the art, and it is a misnomer to label it as such. In particular, the screw 2 is held in the formed body 3 in an "unlooseable" way by a friction area pairing 22 between the screw 3 and the formed body 3 and by the stop 24 formed on the body 3 and the counterstop 25 formed on the screw 2. The screw 2 is "captivated" by friction area pairing 22 in all possible positions. In a conventional captive screw, there is no friction area pairing 22, and the screw is not "captivated" in all possible positions.

The Examiner states that applicant's argument that in Damm the screw shaft passed "into" the ferrule (formed body 3) and not "through" the ferrule is not fully understood. The Examiner explains that in Damm the screw shaft is shown as having a length greater than that of the ferrule and as such, it is not understood how the screw could be construed as being anything but "adapted to pass through the ferrule".

In reply, applicant respectfully notes that in the present invention, applicant screw shaft passes freely through the ferrule, which follows from forming the opening in the ferrule slightly larger than the screw shaft diameter (page 3, lines 8-14), while Damm's screw 2 must be forced through the elastomeric body 3. The Examiner correctly observes that Damm's screw shaft is longer than that height of the body 3, so that it must literally enter one end and extend out the other end of the body (or pass "through") the body when Damm's element is assembled.

With respect to applicant's conclusion that the ferrule (formed body 3) must be compressed for the device of Damm to operate as intended in support of the position that the shaft is only "into" the ferrule, the Examiner responds by disagreeing with applicant's conclusion because, according to the Examiner, in Damm, the figures (referencing for example Fig. 2) show a gap between the ferrule (3) and second part (28). The Examiner contends that it should

be recognized that the isolation between the first and second parts is provided by elastic ring labeled 29.

In reply, applicant respectfully notes that the existence of a gap between the formed body 3 and the second part 28 is not inconsistent with compression of the formed body 3. The formed body 3 is made from an elastomer material (col. 6, lines 48-50) and Damm expressly discloses that when the screw 2 is tightened the "bearing area 6 of the head at the same time comes to rest on the surface of the flange 17 of the formed boy 3 and compresses the formed body 3." (col. 8, lines 19-22, emphasis added). While the Examiner notes that that the isolation between the first and second parts is provided by elastic ring 29, applicant respectfully suggests that the force of compression is transmitted from the screw head 4, through the formed body 3, through the first body 27, to the elastic ring 29, as is apparent, for example, in Figure 2.

The Examiner states that regarding Ernest, applicant argues that Ernest does not disclose the provision of a spring. The Examiner disagrees because Ernest clearly shows a spring (50) in the first disclosed embodiment. The Examiner's response suggests that the Examiner's misapprehends applicant's argument. Applicant agrees that Ernest discloses a spring, but only in the context of certain structural features, such that one of ordinary skill in the art is taught that springs cannot be added to springless captive screws without substantial modifications. As previously noted, in order to provide a spring in Ernest's springless embodiments, the structure of the screw must be significantly modified (col. 5, lines 22-25).

The Examiner next responds to applicant's argument that the skilled artisan would not be motivated to combine a spring as in Ernest with the device of Damm since it would destroy Damm's intention to have the screw be located at any intermediate position relative to the ferrule (formed body). The Examiner concedes that the spring would force the screw to a fully retracted position that would not allow for any intermediate position. However, the Examiner

notes that Damm further discusses that it would be advantageous to pre-mount the first and second parts without danger of the surface of the second part being harmed by the screws (top of column 4). The Examiner states that with this in mind, the inclusion of a spring to force the screw to the fully retracted position would ensure that in a pre-assembled condition, the threaded end of the screw would not protrude past the end of the ferrule so that there would be no danger of the screw harming the surface of the second part (see Damm Fig. 3 and Ernest Fig. 2). The Examiner concludes that the skilled artisan would have recognized this benefit of the spring and as such would have been motivated to combine the spring as in Ernest with the device of Damm. The Examiner further states that in Damm there would be no benefit to the screw being positioned at any intermediate position other than the fully retracted position as exemplified by the drawings only shown the screw in the fully retracted and fully assembled position.

In reply, applicant notes that the "benefit" attributed by the Examiner to the hypothetical combination of Damm and Ernest, that the threaded end of the screw would not protrude past the end of the ferrule so that there would be no danger of the screw harming the surface of the second part has already been achieved by Damm's disclosed invention, such as disclosed at col. 3, line 63 – col. 4, line 5. One of ordinary skill in the art would appreciate that the Examiner's proposed addition of a spring, a third element, would add nothing to Damm, while simultaneously raising the cost of the product, contrary to Damm's disclosed advantage of providing a connecting element "with only two individual parts" (col. 4, lines 25-26). The Examiner contends that there would be no benefit in Damm for the screw being positioned in any intermediate position, because Damm shows only the fully retracted and fully inserted positions in his figures. However, Damm emphasizes repeatedly in his disclosure that the frictional area pairing has the function of ensuring that "the screw can be brought or pushed into

any intermediate position of its limited axial lift relative to the formed body and that it keeps this position after being let go.” (col. 3, lines 52-26). Damm also discloses that his invention makes it “possible to push forward the screws . . . making use of the lift of the limited axial movement, so far that they protrude relative to the plane of the gasket with their free ends. The free ends can then be mated with the counterthreads in the second part much easier.” (col. 5, lines 57-61) Thus, Damm expressly contradicts the Examiner’s conclusion.

The hypothetical construct of Damm and Ernest proposed by the Examiner either would also likely be inoperative or have significantly reduced utility for Damm’s purpose. In order to add the useless spring, the surface area of the friction area pairing would have to be reduced, diminishing the benefits provided by this feature of Damm’s invention. In addition, the contact area between the underside of the head of the screw and the upper surface of the formed body would be reduced, reducing the amount of force that could be applied to the formed body to compress the formed body with significant geometrical distortion of the formed body.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 entered under 35 U.S.C. 103(a) over Damm in view of Ernest for these reasons.

With respect to the alternative rejection wherein Ernest was used as the base reference, the Examiner responds to applicant’s argument that there is no motivation for the combination. The Examiner notes that applicant argues that there would be no motivation for the collar in Damm without the compression gasket and if the collar were located anywhere along the shaft Ernest it would destroy the intended operation of Ernest. The Examiner states his disagreement and responds that the skilled artisan concerned with Ernest would have recognized the teachings of Damm since that the collar would provide the same advantages to the device of Ernest as in Damm. In particular, the Examiner states that the collar once

combined with Ernest would provide a standoff feature as it does in Damm and the standoff feature would then allow an elastic material to be interposed therebetween. The Examiner concludes that the skilled artisan versed in the art would have recognized it would be advantageous to provided a sound decoupling between the plates 12 and 13 of Ernest as disclosed in Damm depending upon the particular application of the device. The Examiner further states that once combined, regardless of where along the length of the shaft the collar were located, it would operate prevent the screw from being removed from the ferrule and thus it would provide the advantageous of not having the threads contact the ferrule which would protect the threads for damage.

In reply, the applicant respectfully points out that the neither reference provides any motivation for the combination proposed by the Examiner. The Examiner suggests modifying Ernest's screw by adding a collar such as disclosed by Damm. The Examiner does not dispute applicant's contention that this change, per se, would render Ernest non-functional. Instead, the Examiner now proposes a further change – adding an element that is not disclosed in either of the cited references, namely “elastic material” to be “interposed” in some unspecified location. The Examiner suggests that one of ordinary skill in the art would recognize, depending on the application, that it would be advantageous to provide sound deadening between plates 12 and 13. This is Damm's goal, but is nowhere mentioned in Ernest. Further, one of ordinary skill in the art would recognize that merely putting elastic material between the two plates 12 and 13 would not necessarily provide any sound deadening. Quite the opposite. In Damm's device, the first part is isolated by elastic material from the second part. In the Examiner's proposed hindsight-guided reconstruction of applicant's invention, the screw bears directly on the ferrule, which is rigidly attached to the first plate 12, and the screw is rigidly attached directly to the second plate 13. No vibrational isolation there. Furthermore, in the

Examiner's hypothetical device, the collar is so small it can be press fit through the ferrule.

There is no reason to believe that such a small collar would be an effective standoff – it may simply be drawn into the nut on the second plate as the screw is tightened. Further, one skilled in the art would not expect that such a small standoff would initially seat the screw on top of the second plate, rather than at some lower level. The Examiner also claims that the standoff would advantageously protect the screw threads from being damaged, by preventing contact of the threads with the ferrule. However, Ernest discloses a plastic locking element 56 which, from the drawings, serves this function, so that no such advantage would be realized by making the alteration proposed by the Examiner. Reconsideration and withdrawal of the alternative rejection are respectfully requested for these reasons.

In sum, the combination of Damm and Ernest does not establish a *prima facie* case of obviousness. Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 103(a) of claim 1 are respectfully requested.

Claims 2-5 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Ernest as modified by Damm, and further in view of Aukzemas.

This rejection is respectfully traversed. Reconsideration and withdrawal of the rejection of claim 2-54 entered over Ernest in view of Damm and further in view of Aukzemas are respectfully requested.

The Examiner notes that Aukzemas disclose the particulars of the ferrule, and in particular that the ferrule is disclosed as having a knurled outer surface including a groove (32) and annular lip (generally at 30). The Examiner concludes that at the time the invention was made, it would have been obvious for one of ordinary skill in the art to modify the exterior of the ferrule of Ernest as disclosed by Aukzemas in order to improve attachment to the panel. The

Examiner further states that the ring on the ferrule being bent is a product-by-process limitation wherein it is merely the final product considered for patentability.

Applicant respectfully points out that there is nothing in the combination of Ernest, Damm or Aukzemas, or any subcombination thereof, that would disclose or suggest the presently claimed invention to one of ordinary skill in the art. In particular, as argued above, the combination of Ernest and Damm does not suggest the modification of adding a collar to Ernest's screw as proposed by the Examiner in rejecting independent claim 1, from which the presently rejected claims depend. Each of dependent claims 2-5 ultimately depend from claim 1, and thus each incorporates the limitation of the required collar. Thus, the proposed combination of Ernst, Damm and Aukzemas does not make out a *prima facie* case of obviousness, because the combination does not include all the limitations of claims 2-5.

Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 103(a) of claims 2-5 over the combination of Ernst, Damm and Aukzemas are respectfully requested for these reasons.

As the present application is now believed in condition for allowance, early reconsideration and allowance of all claims presently in the application are earnestly solicited.

August 5, 2004

Order No. 2478

Respectfully submitted,



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Alex R. Sluzas, Reg. No. 28,669
August 5, 2004

TRANSMITTAL SHEET

Sir:

Enclosed herewith please find the following documents for filing in the United States Patent and Trademark Office:

1. This transmittal sheet in duplicate;
2. Petition for Extension of Time Under 37 CFR 1.136(a) for one-month (Large Entity) in duplicate;
3. Response;
4. A check in the amount of \$110.00 for one-month extension of time filing fee; and
5. Acknowledgment postcard to be date-stamped and returned to Paul & Paul.

The Commissioner is hereby authorized to charge any additional fees associated with this communication, or credit any overpayment, to Paul & Paul Deposit Account No. 16-0750, Order No. 2478.

Respectfully submitted

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August 5, 2004

Order No. 2478

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